

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

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Tel: (912)354-7858

TestAmerica Job ID: 680-118470-1

Client Project/Site: Gold King Mine - Region 8

For:

Weston Solutions, Inc.

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Authorized for release by:

11/8/2015 8:29:47 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

Method Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
6020	Metals (ICP/MS)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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Sample Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-118470-1	GKM_Sludge Pond_102415_1800	Solid	10/24/15 18:00	10/30/15 09:40

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Definitions/Glossary

Client: Weston Solutions, Inc.
Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
*	LCS or LCSD is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

☒	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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Case Narrative

Client: Weston Solutions, Inc.
Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Job ID: 680-118470-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: Gold King Mine - Region 8

Report Number: 680-118470-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 10/30/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 12.4 C.

METALS (ICP) - TCLP

Sample GKM_Sludge Pond_102415_1800 (680-118470-1) was analyzed for Metals (ICP) - TCLP in accordance with EPA SW-846 Methods 1311/6010C. The samples were leached on 11/02/2015, prepared on 11/03/2015 and analyzed on 11/04/2015 and 11/05/2015.

Sodium was detected in method blank LB 280-302365/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Calcium and Magnesium were detected in method blank LB 280-302365/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several analytes failed the recovery criteria low for the MS of sample GKM_Sludge Pond_102415_1800MS (680-118470-1) in batch 280-302856.

Calcium and Sodium failed the recovery criteria low for the MSD of sample GKM_Sludge Pond_102415_1800MSD (680-118470-1) in batch 280-302856. Iron exceeded the RPD limit.

Sodium failed the recovery criteria high for LCS 280-302365/2-A

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sodium failed the recovery criteria high for LCS 280-302365/2-A. Refer to the QC report for details.

METALS (ICP-MS) - TCLP

Sample GKM_Sludge Pond_102415_1800 (680-118470-1) was analyzed for Metals (ICP-MS) - TCLP in accordance with EPA SW-846 Method 1311/6020. The samples were leached on 11/02/2015, prepared on 11/03/2015 and analyzed on 11/04/2015 and 11/05/2015.

Several analytes were detected in method blank LB 280-302191/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Vanadium failed the recovery criteria high for LCS 280-302191/2-B. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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Case Narrative

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Job ID: 680-118470-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Manganese and Zinc failed the recovery criteria low for the MS of sample GKM_Sludge Pond_102415_1800MS (680-118470-1) in batch 280-302667.

Manganese and Zinc failed the recovery criteria low for the MSD of sample GKM_Sludge Pond_102415_1800MSD (680-118470-1) in batch 280-302667. Vanadium failed the recovery criteria high.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Sample GKM_Sludge Pond_102415_1800 (680-118470-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY - TCLP

Sample GKM_Sludge Pond_102415_1800 (680-118470-1) was analyzed for mercury - TCLP in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 11/02/2015, prepared on 11/03/2015 and analyzed on 11/04/2015.

Mercury was detected in method blank LB 280-302191/1-C at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Client Sample ID: GKM_Sludge Pond_102415_1800

Lab Sample ID: 680-118470-1

Date Collected: 10/24/15 18:00

Matrix: Solid

Date Received: 10/30/15 09:40

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2.0	J F1	10	0.090	mg/L		11/03/15 17:10	11/04/15 07:46	1
Calcium	170	B F1	20	0.17	mg/L		11/03/15 17:10	11/04/15 07:46	1
Iron	0.11	U F1 F2	10	0.11	mg/L		11/03/15 17:10	11/05/15 15:46	1
Magnesium	40	B F1	20	0.054	mg/L		11/03/15 17:10	11/04/15 07:46	1
Potassium	2.3	J F1	30	1.2	mg/L		11/03/15 17:10	11/05/15 15:46	1
Sodium	1600	B *	50	0.46	mg/L		11/03/15 17:10	11/05/15 15:46	1

Method: 6020 - Metals (ICP/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0030	J	0.10	0.0020	mg/L		11/03/15 17:10	11/04/15 09:07	1
Arsenic	0.0038	J	0.50	0.0017	mg/L		11/03/15 17:10	11/04/15 09:07	1
Barium	0.099	J B	1.0	0.0015	mg/L		11/03/15 17:10	11/04/15 09:07	1
Beryllium	0.0021	J	0.50	0.00040	mg/L		11/03/15 17:10	11/04/15 09:07	1
Cadmium	0.10	F1	0.10	0.0013	mg/L		11/03/15 17:10	11/04/15 09:07	1
Chromium	0.0067	J	0.50	0.0025	mg/L		11/03/15 17:10	11/04/15 09:07	1
Cobalt	0.30	F1	0.10	0.00027	mg/L		11/03/15 17:10	11/04/15 09:07	1
Copper	2.6	B F1	2.0	0.0028	mg/L		11/03/15 17:10	11/04/15 09:07	1
Lead	0.019	J B	0.50	0.00090	mg/L		11/03/15 17:10	11/04/15 09:07	1
Manganese	42		10	0.016	mg/L		11/03/15 17:10	11/05/15 05:37	10
Molybdenum	0.0016	J B	0.20	0.00070	mg/L		11/03/15 17:10	11/04/15 09:07	1
Nickel	0.11	J F1	4.0	0.0015	mg/L		11/03/15 17:10	11/04/15 09:07	1
Selenium	0.0068	J	0.10	0.0035	mg/L		11/03/15 17:10	11/04/15 09:07	1
Silver	0.00094	J B F1	0.50	0.00017	mg/L		11/03/15 17:10	11/04/15 09:07	1
Thallium	0.0022	J B	0.10	0.00025	mg/L		11/03/15 17:10	11/04/15 09:07	1
Vanadium	0.0025	U * F1	1.0	0.0025	mg/L		11/03/15 17:10	11/04/15 09:07	1
Zinc	33		20	0.10	mg/L		11/03/15 17:10	11/05/15 05:37	10

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000073	J B	0.0020	0.000030	mg/L		11/03/15 17:15	11/04/15 10:32	1

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QC Sample Results

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Method: 6010C - Metals (ICP)

Lab Sample ID: LB 280-302365/1-A

Matrix: Solid

Analysis Batch: 302499

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 302365

Analyte	LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aluminum	0.090	U	10	0.090	mg/L		11/03/15 17:10	11/04/15 07:41	1
Calcium	0.695	J	20	0.17	mg/L		11/03/15 17:10	11/04/15 07:41	1
Magnesium	0.111	J	20	0.054	mg/L		11/03/15 17:10	11/04/15 07:41	1

Lab Sample ID: LB 280-302365/1-A

Matrix: Solid

Analysis Batch: 302856

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 302365

Analyte	LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	0.11	U	10	0.11	mg/L		11/03/15 17:10	11/05/15 15:40	1
Potassium	1.2	U	30	1.2	mg/L		11/03/15 17:10	11/05/15 15:40	1
Sodium	1630		50	0.46	mg/L		11/03/15 17:10	11/05/15 15:40	1

Lab Sample ID: LCS 280-302365/2-A

Matrix: Solid

Analysis Batch: 302499

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 302365

Analyte	Spike		LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
	Added							
Aluminum	2.00		1.89	J	mg/L		95	80 - 120
Calcium	50.0		46.4		mg/L		93	80 - 120
Magnesium	50.0		47.8		mg/L		96	80 - 120

Lab Sample ID: LCS 280-302365/2-A

Matrix: Solid

Analysis Batch: 302856

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 302365

Analyte	Spike		LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
	Added							
Iron	1.00		0.989	J	mg/L		99	80 - 120
Potassium	50.0		50.5		mg/L		101	80 - 120
Sodium	50.0		1650	*	mg/L		3295	80 - 120

Lab Sample ID: 680-118470-1 MS

Matrix: Solid

Analysis Batch: 302499

Client Sample ID: GKM_Sludge Pond_102415_1800

Prep Type: TCLP

Prep Batch: 302365

Analyte	Sample		Spike	MS		D	%Rec	Limits
	Result	Qualifier		Result	Qualifier			
Aluminum	2.0	J F1	2.00	3.13	J F1	mg/L	58	80 - 120
Calcium	170	B F1	50.0	169	F1	mg/L	2	80 - 120
Magnesium	40	B F1	50.0	70.3	F1	mg/L	61	80 - 120

Lab Sample ID: 680-118470-1 MS

Matrix: Solid

Analysis Batch: 302856

Client Sample ID: GKM_Sludge Pond_102415_1800

Prep Type: TCLP

Prep Batch: 302365

Analyte	Sample		Spike	MS		D	%Rec	Limits
	Result	Qualifier		Result	Qualifier			
Iron	0.11	U F1 F2	1.00	0.701	J F1	mg/L	70	80 - 120
Potassium	2.3	J F1	50.0	39.8	F1	mg/L	75	80 - 120
Sodium	1600	B *	50.0	1260	4	mg/L	-604	80 - 120

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QC Sample Results

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-118470-1 MSD

Matrix: Solid

Analysis Batch: 302499

Client Sample ID: GKM_Sludge Pond_102415_1800

Prep Type: TCLP

Prep Batch: 302365

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	2.0	J F1	2.00	3.69	J	mg/L	86	80 - 120	17	20	
Calcium	170	B F1	50.0	200	F1	mg/L	64	80 - 120	17	20	
Magnesium	40	B F1	50.0	81.9		mg/L	84	80 - 120	15	20	

Lab Sample ID: 680-118470-1 MSD

Matrix: Solid

Analysis Batch: 302856

Client Sample ID: GKM_Sludge Pond_102415_1800

Prep Type: TCLP

Prep Batch: 302365

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Iron	0.11	U F1 F2	1.00	0.877	J F2	mg/L	88	80 - 120	22	20	
Potassium	2.3	J F1	50.0	47.4		mg/L	90	80 - 120	18	20	
Sodium	1600	B *	50.0	1490	4	mg/L	-129	80 - 120	17	20	

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: LB 280-302191/1-B

Matrix: Solid

Analysis Batch: 302529

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 302364

Analyte	LB	LB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Antimony	0.0020	U	0.0020		0.10	0.0020	mg/L	11/03/15 17:10	11/04/15 09:00		1
Arsenic	0.0017	U	0.0017		0.50	0.0017	mg/L	11/03/15 17:10	11/04/15 09:00		1
Barium	0.00175	J	0.00175		1.0	0.0015	mg/L	11/03/15 17:10	11/04/15 09:00		1
Beryllium	0.00040	U	0.00040		0.50	0.00040	mg/L	11/03/15 17:10	11/04/15 09:00		1
Cadmium	0.0013	U	0.0013		0.10	0.0013	mg/L	11/03/15 17:10	11/04/15 09:00		1
Chromium	0.0025	U	0.0025		0.50	0.0025	mg/L	11/03/15 17:10	11/04/15 09:00		1
Cobalt	0.00027	U	0.00027		0.10	0.00027	mg/L	11/03/15 17:10	11/04/15 09:00		1
Copper	0.00890	J	0.00890		2.0	0.0028	mg/L	11/03/15 17:10	11/04/15 09:00		1
Lead	0.00259	J	0.00259		0.50	0.00090	mg/L	11/03/15 17:10	11/04/15 09:00		1
Molybdenum	0.000715	J	0.000715		0.20	0.00070	mg/L	11/03/15 17:10	11/04/15 09:00		1
Nickel	0.0015	U	0.0015		4.0	0.0015	mg/L	11/03/15 17:10	11/04/15 09:00		1
Selenium	0.0035	U	0.0035		0.10	0.0035	mg/L	11/03/15 17:10	11/04/15 09:00		1
Silver	0.000440	J	0.000440		0.50	0.00017	mg/L	11/03/15 17:10	11/04/15 09:00		1
Thallium	0.000285	J	0.000285		0.10	0.00025	mg/L	11/03/15 17:10	11/04/15 09:00		1
Vanadium	0.0025	U	0.0025		1.0	0.0025	mg/L	11/03/15 17:10	11/04/15 09:00		1

Lab Sample ID: LB 280-302191/1-B

Matrix: Solid

Analysis Batch: 302667

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 302364

Analyte	LB	LB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Manganese	0.0016	U	0.0016		1.0	0.0016	mg/L	11/03/15 17:10	11/05/15 05:30		1
Zinc	0.010	U	0.010		2.0	0.010	mg/L	11/03/15 17:10	11/05/15 05:30		1

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QC Sample Results

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-302191/2-B

Matrix: Solid

Analysis Batch: 302529

Client Sample ID: Lab Control Sample

Prep Type: TCLP

Prep Batch: 302364

%Rec.

Limits

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.500	0.454		mg/L	91	85 - 115	
Arsenic	4.00	3.77		mg/L	94	85 - 117	
Barium	12.0	11.8		mg/L	98	85 - 118	
Beryllium	0.0500	0.0492	J	mg/L	98	80 - 125	
Cadmium	1.10	1.07		mg/L	97	85 - 115	
Chromium	5.20	5.02		mg/L	97	84 - 121	
Cobalt	0.500	0.466		mg/L	93	85 - 120	
Copper	2.25	2.13		mg/L	95	85 - 119	
Lead	5.50	5.25		mg/L	95	85 - 118	
Molybdenum	1.00	0.990		mg/L	99	85 - 119	
Nickel	0.500	0.475	J	mg/L	95	85 - 119	
Selenium	3.00	2.75		mg/L	92	77 - 122	
Silver	1.05	0.952		mg/L	91	85 - 115	
Thallium	2.00	1.91		mg/L	96	85 - 118	
Vanadium	0.500	0.614	J *	mg/L	123	85 - 120	

Lab Sample ID: LCS 280-302191/2-B

Matrix: Solid

Analysis Batch: 302667

Client Sample ID: Lab Control Sample

Prep Type: TCLP

Prep Batch: 302364

%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Manganese	0.500	0.463	J	mg/L	93	85 - 117	
Zinc	2.50	2.30		mg/L	92	83 - 122	

Lab Sample ID: 680-118470-1 MS

Matrix: Solid

Analysis Batch: 302529

Client Sample ID: GKM_Sludge Pond_102415_1800

Prep Type: TCLP

Prep Batch: 302364

%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	0.0030	J	0.500	0.442		mg/L	88	85 - 115	
Arsenic	0.0038	J	4.00	3.74		mg/L	93	85 - 117	
Barium	0.099	J B	12.0	11.3		mg/L	93	85 - 118	
Beryllium	0.0021	J	0.0500	0.0501	J	mg/L	96	80 - 125	
Cadmium	0.10	F1	1.10	1.09		mg/L	89	85 - 115	
Chromium	0.0067	J	5.20	4.95		mg/L	95	84 - 121	
Cobalt	0.30	F1	0.500	0.729		mg/L	86	85 - 120	
Copper	2.6	B F1	2.25	4.73		mg/L	97	85 - 119	
Lead	0.019	J B	5.50	5.13		mg/L	93	85 - 118	
Molybdenum	0.0016	J B	1.00	0.962		mg/L	96	85 - 119	
Nickel	0.11	J F1	0.500	0.557	J	mg/L	90	85 - 119	
Selenium	0.0068	J	3.00	2.70		mg/L	90	77 - 122	
Silver	0.00094	J B F1	1.05	0.915		mg/L	87	85 - 115	
Thallium	0.0022	J B	2.00	1.85		mg/L	92	85 - 118	
Vanadium	0.0025	U * F1	0.500	0.602	J	mg/L	120	85 - 120	

TestAmerica Savannah

QC Sample Results

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 680-118470-1 MS				Client Sample ID: GKM_Sludge Pond_102415_1800							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result		Unit	D	%Rec	Prep Type: TCLP		
				MS Qualifier	Unit				D	%Rec	Limits
Manganese	42		0.500	38.9	4	mg/L	-574	85 - 117			
Zinc	33		2.50	31.1	4	mg/L	-57	83 - 122			

Lab Sample ID: 680-118470-1 MSD				Client Sample ID: GKM_Sludge Pond_102415_1800							
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result		Unit	D	%Rec	Prep Type: TCLP		
				MSD Qualifier	Unit				D	%Rec	Limits
Antimony	0.0030	J	0.500	0.460	mg/L	91	85 - 115		4	20	
Arsenic	0.0038	J	4.00	3.76	mg/L	94	85 - 117		1	20	
Barium	0.099	J B	12.0	11.5	mg/L	95	85 - 118		2	20	
Beryllium	0.0021	J	0.0500	0.0530	J	102	80 - 125		5	20	
Cadmium	0.10	F1	1.10	1.10	mg/L	91	85 - 115		1	20	
Chromium	0.0067	J	5.20	4.90	mg/L	94	84 - 121		1	20	
Cobalt	0.30	F1	0.500	0.729	mg/L	86	85 - 120		0	20	
Copper	2.6	B F1	2.25	4.62	mg/L	92	85 - 119		2	20	
Lead	0.019	J B	5.50	5.08	mg/L	92	85 - 118		1	20	
Molybdenum	0.0016	J B	1.00	0.960	mg/L	96	85 - 119		0	20	
Nickel	0.11	J F1	0.500	0.561	J	91	85 - 119		1	20	
Selenium	0.0068	J	3.00	2.68	mg/L	89	77 - 122		1	20	
Silver	0.00094	J B F1	1.05	0.918	mg/L	87	85 - 115		0	20	
Thallium	0.0022	J B	2.00	1.86	mg/L	93	85 - 118		0	20	
Vanadium	0.0025	U * F1	0.500	0.623	J F1	125	85 - 120		3	20	

Lab Sample ID: 680-118470-1 MSD				Client Sample ID: GKM_Sludge Pond_102415_1800							
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result		Unit	D	%Rec	Prep Type: TCLP		
				MSD Qualifier	Unit				D	%Rec	Limits
Manganese	42		0.500	39.2	4	mg/L	-514	85 - 117		1	20
Zinc	33		2.50	32.3	4	mg/L	-7	83 - 122		4	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LB 280-302191/1-C				Client Sample ID: Method Blank							
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result		Unit	D	%Rec	Prep Type: TCLP		
				MSD Qualifier	Unit				D	%Rec	Limits
Mercury	0.0000400	J	0.0020	0.000030	mg/L	-514	85 - 117		1	20	

Lab Sample ID: LCS 280-302191/2-C				Client Sample ID: Lab Control Sample							
Analyte	Sample Result	Sample Qualifier	Spike Added	LCS Result		Unit	D	%Rec	Prep Type: TCLP		
				LCS Qualifier	Unit				D	%Rec	Limits
Mercury	0.00500		0.00550		mg/L	-110	90 - 116		1	20	

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QC Sample Results

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 680-118470-1 MS

Matrix: Solid

Analysis Batch: 302523

Client Sample ID: GKM_Sludge Pond_102415_1800

Prep Type: TCLP

Prep Batch: 302373

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits		
Mercury	0.000073	J B	0.00500	0.00525		mg/L		103	90 - 116		

Lab Sample ID: 680-118470-1 MSD

Matrix: Solid

Analysis Batch: 302523

Client Sample ID: GKM_Sludge Pond_102415_1800

Prep Type: TCLP

Prep Batch: 302373

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.000073	J B	0.00500	0.00567		mg/L		112	90 - 116	8	10

QC Association Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Metals

Leach Batch: 302191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	1311	
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	1311	
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	1311	
LB 280-302191/1-B	Method Blank	TCLP	Solid	1311	
LB 280-302191/1-C	Method Blank	TCLP	Solid	1311	
LCS 280-302191/2-B	Lab Control Sample	TCLP	Solid	1311	
LCS 280-302191/2-C	Lab Control Sample	TCLP	Solid	1311	

Prep Batch: 302364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	3020A	302191
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	3020A	302191
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	3020A	302191
LB 280-302191/1-B	Method Blank	TCLP	Solid	3020A	302191
LCS 280-302191/2-B	Lab Control Sample	TCLP	Solid	3020A	302191

Prep Batch: 302365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	3010A	302191
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	3010A	302191
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	3010A	302191
LB 280-302365/1-A	Method Blank	Total/NA	Solid	3010A	
LCS 280-302365/2-A	Lab Control Sample	Total/NA	Solid	3010A	

Prep Batch: 302373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	7470A	302191
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	7470A	302191
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	7470A	302191
LB 280-302191/1-C	Method Blank	TCLP	Solid	7470A	302191
LCS 280-302191/2-C	Lab Control Sample	TCLP	Solid	7470A	302191

Analysis Batch: 302499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	6010C	302365
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	6010C	302365
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	6010C	302365
LB 280-302365/1-A	Method Blank	Total/NA	Solid	6010C	302365
LCS 280-302365/2-A	Lab Control Sample	Total/NA	Solid	6010C	302365

Analysis Batch: 302523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	7470A	302373
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	7470A	302373
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	7470A	302373
LB 280-302191/1-C	Method Blank	TCLP	Solid	7470A	302373
LCS 280-302191/2-C	Lab Control Sample	TCLP	Solid	7470A	302373

Analysis Batch: 302529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	6020	302364

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QC Association Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Metals (Continued)

Analysis Batch: 302529 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	6020	302364
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	6020	302364
LB 280-302191/1-B	Method Blank	TCLP	Solid	6020	302364
LCS 280-302191/2-B	Lab Control Sample	TCLP	Solid	6020	302364

Analysis Batch: 302667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	6020	302364
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	6020	302364
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	6020	302364
LB 280-302191/1-B	Method Blank	TCLP	Solid	6020	302364
LCS 280-302191/2-B	Lab Control Sample	TCLP	Solid	6020	302364

Analysis Batch: 302856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-118470-1	GKM_Sludge Pond_102415_1800	TCLP	Solid	6010C	302365
680-118470-1 MS	GKM_Sludge Pond_102415_1800	TCLP	Solid	6010C	302365
680-118470-1 MSD	GKM_Sludge Pond_102415_1800	TCLP	Solid	6010C	302365
LB 280-302365/1-A	Method Blank	Total/NA	Solid	6010C	302365
LCS 280-302365/2-A	Lab Control Sample	Total/NA	Solid	6010C	302365

TestAmerica Savannah

Lab Chronicle

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Client Sample ID: GKM_Sludge Pond_102415_1800

Lab Sample ID: 680-118470-1

Date Collected: 10/24/15 18:00

Matrix: Solid

Date Received: 10/30/15 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			1.0 g	1.0 mL	302191	11/02/15 17:00	DFB1	TAL DEN
TCLP	Prep	3010A			10 mL	50 mL	302365	11/03/15 17:10	SEJ	TAL DEN
TCLP	Analysis	6010C		1	10 mL	50 mL	302499	11/04/15 07:46	SJS	TAL DEN
		Instrument ID: MT_026								
TCLP	Leach	1311			1.0 g	1.0 mL	302191	11/02/15 17:00	DFB1	TAL DEN
TCLP	Prep	3010A			10 mL	50 mL	302365	11/03/15 17:10	SEJ	TAL DEN
TCLP	Analysis	6010C		1	10 mL	50 mL	302856	11/05/15 15:46	SJS	TAL DEN
		Instrument ID: MT_026								
TCLP	Leach	1311			1.0 g	1.0 mL	302191	11/02/15 17:00	DFB1	TAL DEN
TCLP	Prep	3020A			10 mL	50 mL	302364	11/03/15 17:10	SEJ	TAL DEN
TCLP	Analysis	6020		1	10 mL	50 mL	302529	11/04/15 09:07	LMT	TAL DEN
		Instrument ID: MT_077								
TCLP	Leach	1311			1.0 g	1.0 mL	302191	11/02/15 17:00	DFB1	TAL DEN
TCLP	Prep	3020A			10 mL	50 mL	302364	11/03/15 17:10	SEJ	TAL DEN
TCLP	Analysis	6020		10	10 mL	50 mL	302667	11/05/15 05:37	LMT	TAL DEN
		Instrument ID: MT_077								
TCLP	Leach	1311			1.0 g	1.0 mL	302191	11/02/15 17:00	DFB1	TAL DEN
TCLP	Prep	7470A			30 mL	50 mL	302373	11/03/15 17:15	CMK	TAL DEN
TCLP	Analysis	7470A		1	30 mL	50 mL	302523	11/04/15 10:32	CMK	TAL DEN
		Instrument ID: MT_033								

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TestAmerica Savannah

Serial Number 80500

TEST AND CHAIN OF CUSTODY RECORD																					
 680-118470 Chain of Custody							<input checked="" type="checkbox"/> TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404		Website: www.testamericainc.com Phone: (912) 354-7858 Fax: (912) 352-0165												
<input checked="" type="checkbox"/> Alternate Laboratory Name/Location Test America Denver 4955 Yarrow St.							Phone: Fax:														
PROJECT REFERENCE <i>Gold King Mine</i>	PROJECT NO.	PROJECT LOCATION (STATE) <i>CO</i>	MATRIX TYPE	Arvada, CO 80002	REQUIRED ANALYSIS			PAGE <i>1</i>	OF <i>1</i>												
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.							STANDARD REPORT DELIVERY <i>0</i>												
CLIENT (SITE) PM <i>Moira Pryhoda</i>	CLIENT PHONE <i>303-729-6100</i>	CLIENT FAX <i>X6101</i>							DATE DUE <i>0</i>												
CLIENT NAME <i>Weston Solutions</i>	CLIENT E-MAIL							EXPEDITED REPORT DELIVERY (SURCHARGE) <i>0</i>													
CLIENT ADDRESS <i>1435 Garrison St, Ste 100, Lakewood, CO 80215</i>									DATE DUE <i>0</i>												
COMPANY CONTRACTING THIS WORK (if applicable)																					
SAMPLE	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED					REMARKS												
DATE	TIME				AQUEOUS (WATER) <input checked="" type="checkbox"/>	SOLID OR SEMIOLID <input type="checkbox"/>	Liquid <input type="checkbox"/>	NONAQUEOUS LIQUID (OIL, SOLVENT,...) <input type="checkbox"/>													
10/24/15	1800	<i>GKM-Sludge Pond-102415-1800</i>			<i>C</i>	<i>S</i>	<i>—</i>	<i>1</i>													
RELINQUISHED BY: (SIGNATURE) <i>Antonietti Mimm</i>										DATE <i>10/29/15</i>	TIME <i>1400</i>	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME				
RECEIVED BY: (SIGNATURE) <i>G. R.</i>										DATE <i>10/30/15</i>	TIME <i>9:40</i>	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME				
LABORATORY USE ONLY																					
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	CUSTODY SEAL NO. <i>717274</i>	SAVANNAH LOG NO.	LABORATORY REMARKS <i>12.4 IR 7+0.0 - mkb 10/30/15 No ICE</i>														
										12	11	10	9	8	7	6	5	4	3	2	1

Login Sample Receipt Checklist

Client: Weston Solutions, Inc.

Job Number: 680-118470-1

Login Number: 118470

List Number: 2

Creator: Dedio, Michael T

List Source: TestAmerica Denver

List Creation: 10/30/15 04:50 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	No ice per client request.
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Not requested on COC.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: Weston Solutions, Inc.

Project/Site: Gold King Mine - Region 8

TestAmerica Job ID: 680-118470-1

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Colorado	State Program	8	N/A	12-31-15 *

Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	11-30-15 *
A2LA	ISO/IEC 17025		2907.01	11-30-15
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-16
Arizona	State Program	9	AZ0713	12-19-16
Arkansas DEQ	State Program	6	88-0687	06-01-16
California	State Program	9	2513	08-31-16
Connecticut	State Program	1	PH-0686	09-30-16
Florida	NELAP	4	E87667	06-30-16
Georgia	State Program	4	N/A	01-09-15 *
Illinois	NELAP	5	200017	04-30-16
Iowa	State Program	7	370	11-30-16
Kansas	NELAP	7	E-10166	04-30-16
Louisiana	NELAP	6	02096	06-30-16
Maine	State Program	1	CO0002	03-03-17
Minnesota	NELAP	5	8-999-405	12-31-15
Nevada	State Program	9	CO0026	07-31-16
New Hampshire	NELAP	1	205310	04-28-16
New Jersey	NELAP	2	CO004	11-30-15 *
New York	NELAP	2	11964	04-01-16
North Carolina (WW/SW)	State Program	4	358	12-31-15
North Dakota	State Program	8	R-034	01-09-16
Oklahoma	State Program	6	8614	08-31-16
Oregon	NELAP	10	4025	01-09-16
Pennsylvania	NELAP	3	68-00664	07-31-16
South Carolina	State Program	4	72002001	01-09-16
Texas	NELAP	6	T104704183-15-11	09-30-16
USDA	Federal		P330-13-00202	07-02-16
Utah	NELAP	8	CO00026	07-31-16
Virginia	NELAP	3	460232	06-14-16
Washington	State Program	10	C583	08-03-16
West Virginia DEP	State Program	3	354	11-30-15
Wisconsin	State Program	5	999615430	08-31-16
Wyoming (UST)	A2LA	8	2907.01	11-30-15

* Certification renewal pending - certification considered valid.

TestAmerica Savannah